



ABCB

Interim Consultation report

Responses to Consultation RIS on
proposed NCC 2022 residential
energy efficiency provisions

June 2022



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The Australian Building Codes Board

The Australian Building Codes Board (ABCB) is a joint initiative of all levels of government in Australia, together with the building industry. Its mission is to oversee issues relating to health, safety, amenity and sustainability in building. The ABCB promotes efficiency in the design, construction and performance of buildings through the National Construction Code, and the development of effective regulatory and non-regulatory approaches. The Board aims to establish effective and proportional codes, standards and regulatory systems that are consistent between states and territories. For more information see the [ABCB website](#).

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Background to the consultation process

Proposed NCC 2022 residential energy efficiency provisions

In 2019, Building Ministers tasked the ABCB with updating the energy efficiency provisions for residential buildings in NCC 2022, informed by the '*Trajectory for Low Energy Buildings*' policy.

The ABCB developed options for improving the energy efficiency of new residential buildings (houses and apartments):

- Option A – a minimum level of building fabric efficiency equivalent to 7-stars NatHERS, plus a whole-of-home annual energy use budget that can be met through:
 - installing efficient air-conditioning, water heating and lighting,
 - the installation of on-site renewables, such as rooftop photovoltaics (PV), or
 - a combination of both.
- Option B – as above, but with a larger whole-of-home annual energy use budget, which would require less energy efficient equipment and/or less PV.

The Consultation RIS

A Consultation Regulation Impact Statement (RIS) was developed independently by ACIL Allen in relation to enhanced residential energy efficiency provisions.

The Consultation RIS presented the impact of the proposed provisions on two levels:

- economy-wide level, which considers whether society as-a-whole is better off, and netting out (to zero cost and benefit) transfers between different parties within the economy
- household level, which analyses whether the average household is better off.

On 20 September 2021 this Consultation RIS was released for public comment, with comments closing on 7 November 2021.

A total of 110 submissions were received. All responses (where permission was given to publish) can be viewed on the [ABCB consultation website](#).

This *Interim Consultation Report* summarises the key themes raised by stakeholders and gives a broad response to each theme. A full consultation report will be released with the Decision Regulatory Impact Statement in the middle of 2022.

Major themes and responses

The following section highlights the themes raised in consultation, and responses in the context of preparing the final Decision RIS.

Definition of the problem and policy options

Problem definition

Stakeholders raised issues with the way that the Consultation RIS defined both the problem that the policy options are trying to solve.

In particular, some stakeholders suggested a broader range of issues could have been considered part of the policy problem, including:

- social equity;
- health and wellbeing;
- climate change; and
- resilience of homes and the grid to weather extremes.

The problem definition chapter of the RIS will be revised to include a discussion of the above problems identified by stakeholders but noting these remain outside the direct scope of the work requested by Building Ministers.

Policy options

Several submissions suggested alternative policy options should be analysed in the Consultation RIS.

The most common alternative options were:

- a net zero option;
- adopting the Whole of House (WoH) provisions only (with shell remaining at 6 stars); and
- setting a lower shell stringency (6.5 stars) for warmer climate zones (climate zone 2 and 3).

The Decision RIS will reflect the decisions made by the ABCB in respect to the design of the policy options analysed and will include commentary about other policy options explored but not analysed in the DRIS. High level economic analysis will be presented for some alternative options.



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Climate change

The majority of submissions expressed the view that the Consultation RIS did not adequately identify and define the problem as one of decreasing greenhouse gas emissions through improved energy efficiency.

Feedback included stakeholder views that the Consultation RIS:

- did not adequately communicate the need to decarbonise the built environment to address climate change and to achieve the net zero emissions commitments of governments
- understated the range and scale of problems that need to be addressed, particularly with respect to social equity, health and well-being of households, and resilience to extreme weather.

Broader consideration of the impacts of, and response to, climate change are outside the scope of the NCC.

Other submissions argued the problem raised in the Consultation RIS could be addressed more cost effectively by increasing the energy efficiency of existing buildings. This is also outside the scope of the NCC.

In response to this feedback, the problem statement chapter in the Decision RIS will be revised to include note the issues raised while recognising the scope limitations of this work. The DRIS will also be updated to reflect the changes in governments' policy commitments to net zero emissions by 2050 or earlier.

Disaggregating the impacts of the two elements

The proposal has two major elements, the 7-star fabric improvement and the whole-of-home annual energy use budget.

Stakeholders suggested that these two elements should be evaluated separately to identify what is driving the cost-benefit analysis results.

Data has been collected that will enable ACIL Allen to separate the contribution of the two elements and their benefit-to-cost ratios and net present values.

Modelling and the impacts of climate change

Model should use future climate data

Some submissions suggested that future climate data should be used to model the energy impacts.

This is outside the scope of the work requested by Building Ministers. The current work is guided by the Trajectory for Low Energy Buildings.

Designing buildings for future climate is not straightforward given the potential for unintended consequences. For example, in cooler climates, new homes optimised for warmer future climate conditions may require more heating in the near term. Further work will be required to properly assess the future performance requirements of buildings.

Resilience to climate change

Some submissions suggested that the proposed changes to the NCC should ensure that buildings are also resilient to climate change.

Improving the resilience of buildings to future climate risks is a separate subject that includes more than a focus in improving the energy efficiency of buildings.

A significant number of submissions also argued that the options would improve building resilience to extreme weather conditions and blackouts, but that the Consultation RIS did not take this into account.

This feedback will be reflected qualitatively in the Decision RIS.

Inclusion and quantification of health impacts

It was argued that health benefits were under-estimated, particularly the reduction in morbidity from climate extremes and burning fossil fuels.

The Decision RIS will include more discussion on reduced morbidity and quantify the benefits of reduced fuel burn in homes (i.e. reduced gas heating).

Broader societal resilience to climate change will also be reflected in the cost of carbon (as discussed below).



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Feedback on compliance cost estimates

Many submissions provided feedback on how the Consultation RIS estimated the different costs associated with complying with the proposed provisions. Some argued the costs were underestimated, while others argued they were overestimated.

Other compliance options

Many submissions suggested that low-cost compliance options (like changing the orientation of the dwelling and reducing the size of the house) were ignored. These compliance options were not used because there is an amenity cost to these changes and they outside the remit of the NCC.

This aspect of the costing will be explained in more detail in the Decision RIS.

Learning rates

Some submissions suggested there should be a learning rate for construction costs (the Consultation RIS only applied a learning rate to PV costs). Evidence was provided which shows that the price of higher performing glazing falls when there is higher take up.

A learning rate will subsequently be applied to glazing products in the Decision RIS.

Thermal bridging

Several submissions commented on the proposal to address thermal bridging in steel-framed homes. Concern was raised that the benefits of addressing thermal bridging were not included (although the reason for this was explained in detail in the Consultation RIS), but the costs were.

The benefits of thermal bridging will be included in the Decision RIS.

Compliance costs

Submissions from the construction industry included the estimated costs to upgrade a selection of home designs and claimed the costs are higher than those in the Consultation RIS.

The ABCB contacted stakeholders who submitted their own costings for complying with the 7-star NatHERS requirements. These costs were analysed in detail. It was found that the costs in the Consultation RIS remain appropriate for the central case. However, case studies will be



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presented in the Decision RIS, to show the impact of the provisions on larger houses (as highlighted by stakeholders).

In addition to the case studies, the Decision RIS will include additional sensitivity analysis showing the impact of increases in compliance costs to account for the complexities and uncertainties in the compliance costs modelled.

Information provided by stakeholders will also be used to update transition costs, particularly related to re-design costs.

Overall, the cost of compliance will decrease in the Decision RIS. Following a review of the technical modelling, the whole-of-home compliance cost pathways have been updated with additional data to reflect the broader range of compliance options that are available to industry in the field.

Transition costs

Submissions from the construction industry also claimed that transition costs were underestimated.

The methodology for costing this impact will be changed to reflect this feedback in the Decision RIS.

Rebound effect for energy use

The application of a rebound effect (i.e. a 10% increase in energy use due to greater efficiency) was questioned in some submissions, which argued that the net impact of the rebound effect is zero because consumers derive a benefit from the increased energy use.

The Decision RIS model will be updated to include the benefit resulting from increased energy use (the amenity benefits) resulting in a net zero impact on households, but will maintain the adjustment to greenhouse gas emissions savings (due to the rebound effect).

Energy market impacts

Wholesale electricity price level

Comments were received on the analysis of the energy market impacts. Several submissions expressed the view that the reduction in wholesale electricity prices under Option A should be accounted for in the benefits.

The energy market model has been updated to reflect changes in the energy market since the Consultation RIS modelling was done, and to reflect the updated outputs from the models that analyse the proposal.

Where updated modelling shows there is a reduction in wholesale prices in some jurisdictions, offset by increases in others, the approach in the Consultation RIS in regards to the treatment of wholesale energy prices will be maintained.

Updates to the model have also produced an up-to-date projection of PV uptake by jurisdictions under the proposed energy efficiency provisions.

Capital expenditure on energy network upgrades

Some submissions advocated for the discount to energy network benefits being removed.

ACIL Allen calculated a theoretical reduction in capital expenditure on energy network upgrades, where the increase in installation in PV results in less capacity being required in augmenting or servicing the network.

Where the network capacity is not constrained (and therefore will not need augmenting) there can be no savings in capital expenditure. ACIL Allen's approach was to apply a discount to recognise that for many reasons savings do not materialise. The approach has been discussed with energy networks and no feedback was received that would justify different assumptions.

Pricing carbon

There were many comments on the way that climate change was captured and accounted for in the cost-benefit analysis. Specifically, many submissions claimed that the cost of carbon used in the analysis was too low.

The Consultation RIS used the value of one tonne of carbon abatement delivered through the Emissions Reduction Fund (ERF). The average price of one tonne of abatement at the most recent auction (October 2021) was \$16.94.

In response to these submissions, the Social Cost of Carbon will be used to reflect the future damage caused by climate change.

The SCC was included as a sensitivity test in the Consultation RIS. The value of the SCC will be recalculated, based on the latest data and methodology, for inclusion in the Decision RIS. This may result in some elements of the cost-benefit analysis being removed to prevent double counting.



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Development of the Decision RIS

The Decision RIS is being updated, based on:

- the feedback from stakeholders above;
- new evidence and refinements to the models the Consultation RIS was based on; and
- updates to data used in the models.

The Decision RIS will be assessed by the Office of Best Practice Regulation (OBPR), for compliance with the [Regulatory Impact Analysis Guide for Ministers' Meetings and National Standard Setting Bodies](#).

Decision by Building Ministers

The Decision RIS will be provided to the ABCB Board, ahead of a final decision by Building Ministers on the proposal's inclusion in NCC 2022, and if so any transition period.

The Decision RIS will be released to the public as soon as practicable following the decision.